U.S. Department of Transportation
United States Coast Guard

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Eighth Coast Guard District
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501 Magazine Street
New Orleans, LA 70130-3396
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16710
5 February 1999

From: Commander, Eighth Coast Guard District
To: Distribution

Subj: NON-SPARKING VENTILATION FAN REQUIREMENTS FOR MODUS

1. Enclosed, for your information, you will find Marine Safety Center's reply to Hydrocarbon Flow Specialist, Inc. regarding non-sparking ventilation fan requirements for mobile offshore drilling units (MODUs).

2. If you have any questions, please feel free to contact LT L. Berney at (504) 589-6217.

G. A. TETREAU
By direction

Encl: (1) MSC-2 16710 ltr of 19 Jan 99

Dist: All Eighth District Gulf Region MSOs and MSU Galveston

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Center

400 7TH Street, S.W.
Washington, DC 20590-0001
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Phone: (202) 366-6440
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16710/P005096/bma
Serial: E2-9900110
January 19, 1999

Mr. Owen Risher
The Hydro Carbon Flow Specialist, Inc.
P.O. Box 2859
Morgan City, LA 70381

Subj: Non-sparking Ventilation Fan Requirements
Mobile Offshore Drilling Unit Installations

Ref: (a) Your letter dated December 12, 1998
(b) Your letter dated January 6, 1999
(c) American Petroleum Institute (API) RP 500B 11.6.2.1.4 Division 1 Hazardous (Classified) Locations
(d) American Petroleum Institute (API) RP 500B 11.6.3.5 Division 2 Hazardous (Classified) Locations
(e) ABS Rules for Building and Classing Steel Vessels, section 4/5B7.7

Dear Mr. Risher:

We have reviewed the information forwarded to us in reference (a) and (b) and concur with your interpretation of the federal regulations governing the use of non-sparking ventilation fans aboard MODU's. Specifically, we note the following points:

1) Reference (c) and (d) as well as 46 CFR 111.105-33 clearly classify the area within a 5 foot (1.5 meter) radius of a ventilation outlet as being a Class 1 Division 1 space when the outlet is being used to ventilate a Class 1 Division 1 space. The area within an additional 5 foot boundary beyond this radius is classified as a Class 1 Division 2 space.

2) The regulations regarding the use of ventilation as stated in 46 CFR 111.105-21 are clear in that a fan used for ventilation of a hazardous location must be of a non-sparking design. "Non-sparking" is defined by the regulations in 46 CFR 110.15-1(b)(5) as meeting the requirements of reference (e).

This office checks for compliance with the above regulations during the plan review process. Your letter indicates that there may be a compliance problem associated with equipment added to existing rigs. Accordingly, field inspection offices will be apprised of this situation so that appropriate measures may be taken to ensure the safe ventilation of hazardous locations. If you have any further questions regarding this matter, please contact LT Brian Armenta of my staff at (202) 366-6453.

Sincerely,

M. J. BURROWS
Commander, U.S. Coast Guard
Chief, Engineering Division
By direction of the Commanding Officer

Copy: G-MSE-3, w/copy ref (b)
G-MOC-2, w/copy ref (b)
CCGD8 (m), w/copy ref (b)
MSO Morgan City, w/copy ref (b)

Enclosure (1)

THE HYDRO CARBON FLOW SPECIALIST, INC.
P.O. BOX 2859
MORGAN CITY, LA 70381
(504) 395-6106 OFFICE / (504) 395-6108 FAX

COMMANDER MARK BURROWS
U.S. COAST GUARD
MSC – 2
400 7TH ST. S.W.
WASHINGTON, D.C. 20590-0001

Dear Commander Burrows:

Thank you for your time on the phone. As you requested, I am replying by letter. Hopefully my questions will be easily answered.

As I stated in our conversation, my company is in the business of conveying drill cuttings from the shaker house and drilling mug from the rig floor, mud pits and pump house. All of the areas listed meet the Class I, Division I specifications as per CFR 46 108.170. The drill cuttings, diesel-based mud and synthetic drilling mud are vacuumed up by large blowers and deposited into boxes or tanks for removal to land disposal. In certain applications, the cuttings are vacuumed with these blowers and put into injection units on the rigs. This is for injection into the annular space on the well being drilled.

I have attached some information from other Coast Guard officials, the Mineral Management Service, ABS Regulations and CFR regulations. There is also some information from the manufacturers of the blowers. Several of the facts include:

- The CFR 46 111.105-21 is clear on the need for these blowers to have non-sparking impellers. (108.170 Definitions; see Notes 1)
- The ABS 4/1.92 is clear on the need for these blowers to have non-sparking impellers.
- The MMS is clear on the need for these blowers to have non-sparking impellers.
- GapVax is very clear on the fact that liquids with a flash point below 140 degrees F should not be vacuumed up with a positive displacement blower with steel impellers.

By design, the units move 1000 to 5000 CFM of air through the system, while moving the solids and gases to the disposal system. With the drive units being explosion-proof (Electric: motor, starter, wiring) and (Diesel: emergency shut-off and exhaust wrapping), is it a CFR requirement as per 111.105-21 that the impellers be non-sparking? All of the units use a duct system to move the air (gas) and solids to the boxes and tanks.

While the primary use of these blowers is not just to ventilate the Class I, Division I, the scope of their work area is being ventilated at a rate of 1000 to 5000 CFM. It also needs to be stated that these blowers are used in the industry of land-based applications and are not to vacuum liquids with a flash point of 140 degrees (diesel 138 degrees F flash) if they do not have non-sparking impellers.

My question is of safety and business. Because of my knowledge of land-based fires with steel impellers on positive displacement blowers, I feel that it is my responsibility to let the

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I have attached some information from other Coast Guard officials, the Mineral Management Service, ABS Regulations and CFR regulations. There is also some information from the manufacturers of the blowers. Several of the facts include:

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While the primary use of these blowers is not just to ventilate the Class I, Division I, the scope of their work area is being ventilated at a rate of 1000 to 5000 CFM. It also needs to be stated that these blowers are used in the industry of land-based applications and are not to vacuum liquids with a flash point of 140 degrees (diesel 138 degrees F flash) if they do not have non-sparking impellers.

My question is of safety and business. Because of my knowledge of land-based fires with steel impellers on positive displacement blowers, I feel that it is my responsibility to let the

offshore industry know of the possible fire hazard with units that have impellers made of steel. These impellers are not made of non-sparking materials. Furthermore, after an accident I would feel guilty knowing of the problem and not notifying the industry. The vacuum blowers are new to the offshore industry and their use is increasing daily for cuttings and liquid movement. The use of steel impellers is becoming commonplace.

The systems that are becoming available to the offshore industry look explosion-proof with explosion-proof starters, motors and fittings, but as a cost cutting move, the impellers are made of steel. Non-sparking blowers are readily available. It seems as though some service companies are more concerned with profits than safety. As per CFR, ABS, MMS and API, it is clearly necessary to meet the regulation mandate of having non-sparking impellers.

The blowers are acting as fans and moving air through the duct systems. So it is also clear that the area of the blowers takes on the classification of the area being ventilated.

Question 1:

Is it your opinion that if our equipment ventilates a Class I, Division I area with the use of a blower with non-sparking impellers and a duct system, that the area around the blower becomes a Class I, Division I area as well? — no

CFR 46 Ref. 108.170 NOTES #7 111.10521

Question 2:

Would units meeting all electrical and power drive requirements be required to have non-sparking impellers to be able to ventilate a Class I, Division I area?

Your assistance in this matter is greatly appreciated.

Respectfully yours,

OWEN T. RISHER
HYDRO CARDON FLOW SPECIALIST, INC.

5.3 - 11.6.2